Red Hill Fuel Storage Facility

Status Update for HBWS – 27June2016

Implementation of Administrative Order on Consent between the Navy and Defense Logistics Agency with Hawaii Department of Health and the US EPA Region 9

[DateTime]

Background on AOC

- Why an AOC
- Overview of the Provisions of the AOC
- Roles and Responsibilities
- AOC Decision Process
- Stakeholder Involvement
- Work to be Performed

External Subject Matter Experts (E-SMEs)

- Three External Parties with Subject Matter Expertise Engaged in the AOC Implementation Process
  - Hawaii Department of Land and Natural Resources (DLNR)
  - United States Geologic Service (USGS)
  - Honolulu Board of Water Supply (BWS)

E-SMEs Involvement in Process

- AOC States ". . intent of the Parties to seek the advice of subject matter experts, such as . . . for scoping and review of key deliverables. The Parties shall take actions that facilitate sharing of information with subject matter experts . . ."

Summary - Work to be Performed

- Section 2 - Tank Inspection, Repair, and Maintenance
- Section 3 - Tank Upgrade Alternatives
- Section 4 - Release Detection / Tank Tightness Testing
- Section 5 - Corrosion and Metal Fatigue Practices
- Section 6 – Investigation and Remediation of Releases
- Section 7 – Groundwater Protection and Evaluation
- Section 8 – Risk and Vulnerability Assessment

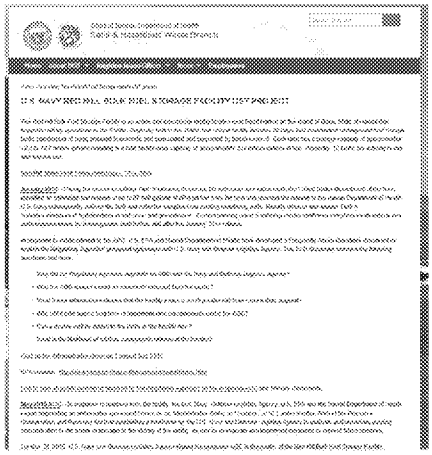
The Regulatory Agencies Are Committed to Involving the E-SMEs in the Process

- Agencies Facilitated Meetings in May with Parties and E-SMEs to Discuss Comments on Key Deliverables.
- Agencies Have Facilitated the Sharing of Documents and Information with E-SMEs and the Public.

Information Available to the Public

DOH Website

health.hawaii.gov/shwb/ust-red-hill-project-main/



EPA Website

www.epa.gov/red-hill

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Section 2 – Tank Inspection, Repair and Maintenance (TIRM)

Specific Task	AOC Deadline	Current Status
Scoping Meetings (2.1)	Start within 30 Days from effective date of AOC	Waiting for Navy Concurance Scoping Complete
TIRM Procedures Report (2.2)	Within 120 days from final scoping meeting	Revised Draft Outline for TIRM Procedures Report received from Navy 23-Mar-16
Decision Meeting (2.3)	Within 60 days of TIRM Procedures Report	

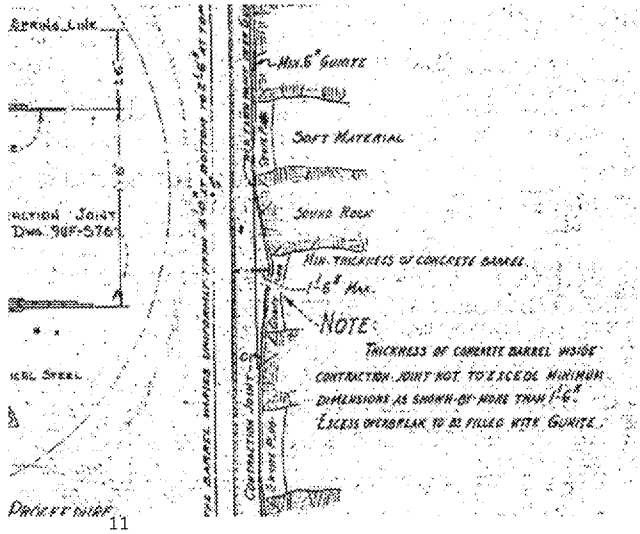
Key Findings to Date Related to TIRM

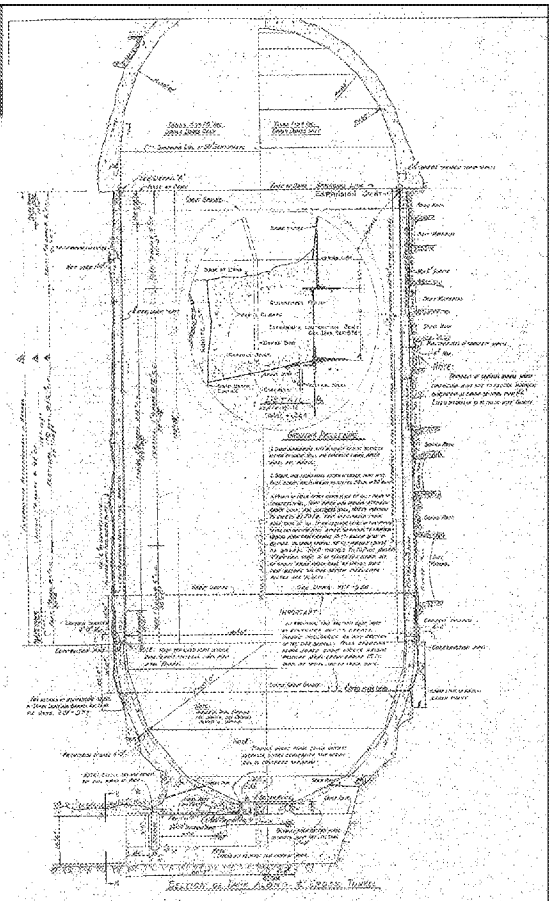
- Tank 5 Inspection, Repair and Maintenance was Done by a Different Contractor than Prior Tanks
- Quality Assurance and Quality Control Procedures Very Critical
- Clear Opportunities for Improvement in Contracting and Procedures

Section 3 – Tank Upgrade Alternatives

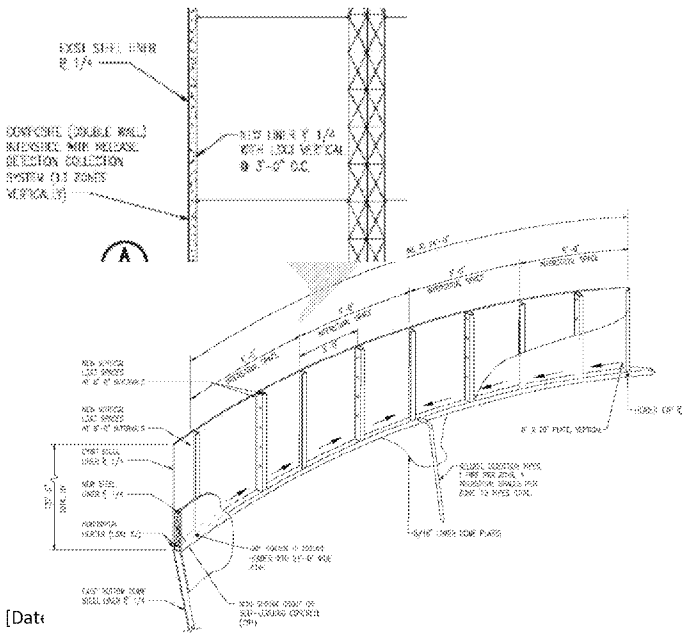
Specific Task	AOC Deadline	Current Status
Scoping Meetings (3.1)	Start within 30 Days from effective date of AOC	Waiting for Navy Concurance Scoping Complete
Scope of Work	Within 90 days from final scoping meeting	Draft SOW Outline submitted 29-Jan-2016
Report	Within 12 Months of SOW Approval	

Tank Upgrade Alternatives Available Given Original Design





Primary Tank Upgrade Alternatives to Be Considered



- Double Wall
  - Composite
  - Tank within Tank
- Single
  - Restoration of Existing Single Liner
  - Replacement of Liner with New Single Liner

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Key Tank Upgrade Considerations

- Effective Containment of Fuel
- Condition of Existing Infrastructure
- Risk and Vulnerability
- Overall Engineered System vs. Focus on Single Components of System
- Ability to Repair and Maintain
- Cost vs. Benefit

Section 4 – Release Detection and Tightness Testing

Specific Task	AOC Deadline	Current Status
TTT Frequency Increase (4.1)	Within one year of effective date of AOC	
Outline RD Monitoring Sys Rpt. (4.2)	Within 30 days of effective date of AOC	Approved by Agencies
RD Monitoring System Rpt. (4.3)	Within 60 Days of Outline Approval	Submitted 4-Apr-16 Agency Approval Pending
Scoping Mtgs - New RD Alts (4.4)	Within 60 Days of agencies approval of Monitoring System Report	

Release Detection and Tightness Testing Report - Key Issues

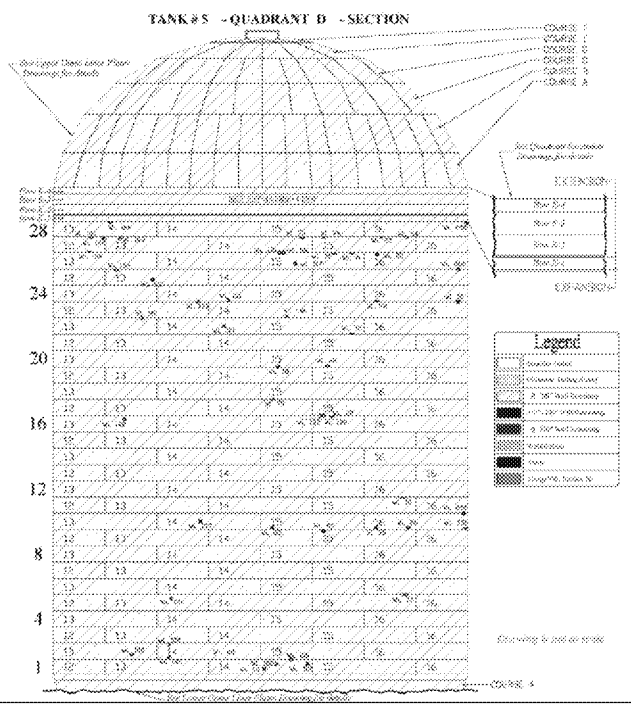
- Frequency
- Precision
- Impact of False Positives
- Opportunities for Improvements

Section 5 - Corrosion and Metal Fatigue Practices

Specific Task	AOC Deadline	Current Status
Report Outline (5.1)	Within 30 days of effective date of AOC	Approved by Agencies
Final Report (5.2)	Within 60 days of approved outline	Submitted 4-Apr-16 Agency Approval Pending
Scoping for Destructive Testing (5.3.1)	Within 90 days from regulatory agencies approval of Corrosion and Metal Fatigue Rpt.	

Corrosion and Metal Fatigue Report – Key Issues

- Effectiveness of Non-Destructive Testing
- Corrosion Rate
- Construction Anomalies
- Opportunities for Improvements

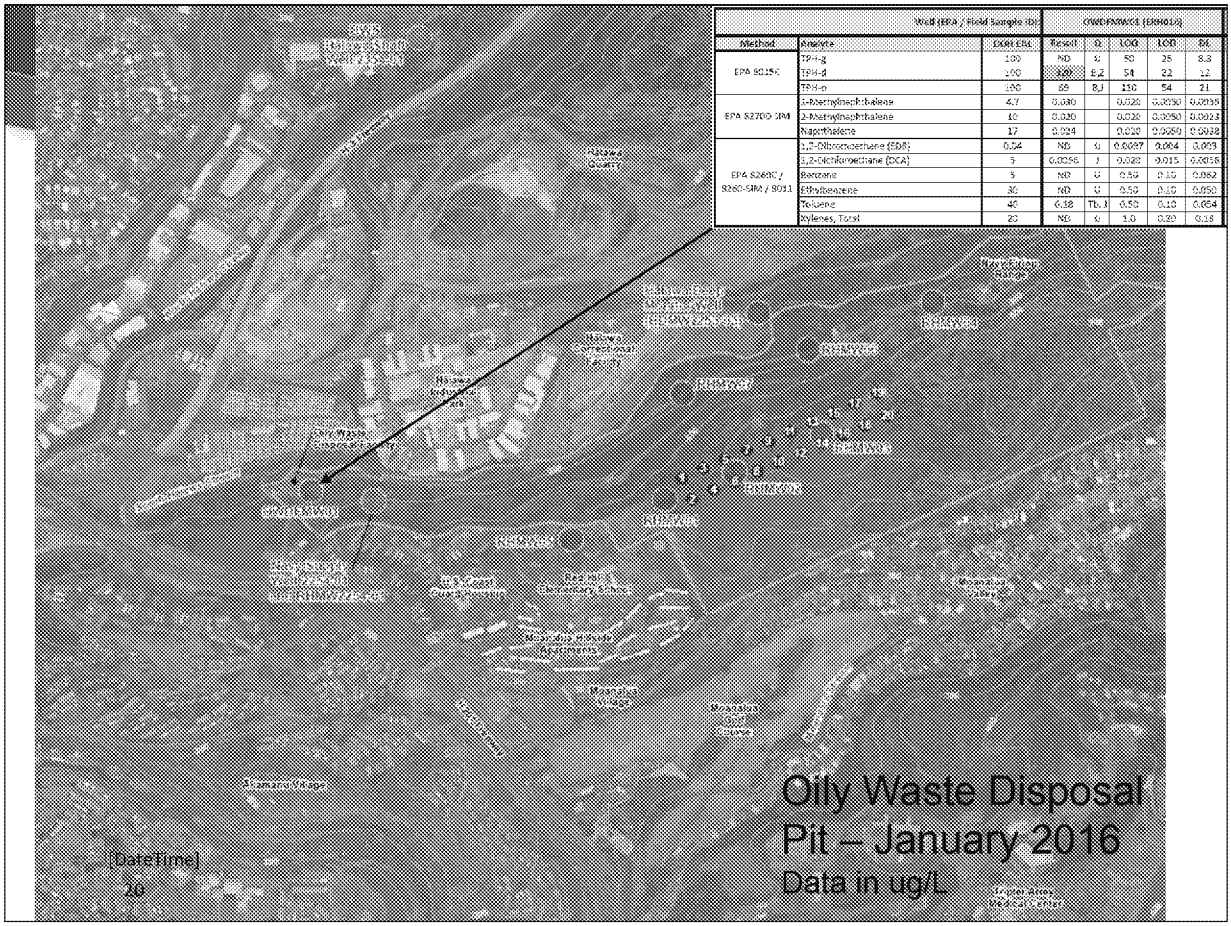


Section 6 – Investigation and Remediation of Releases

Specific Task	AOC Deadline	Current Status
Scoping Meetings	Begin within 30 days of effective date of AOC	Complete
Scope of Work	Within 60 days of final scoping meeting	Submitted 4-May-16. Regulatory Agencies approval pending
Investigation and Remediation Report	Within 24 months from the regulatory agencies approval of SOW	

Section 7 – Groundwater Protection and Evaluation

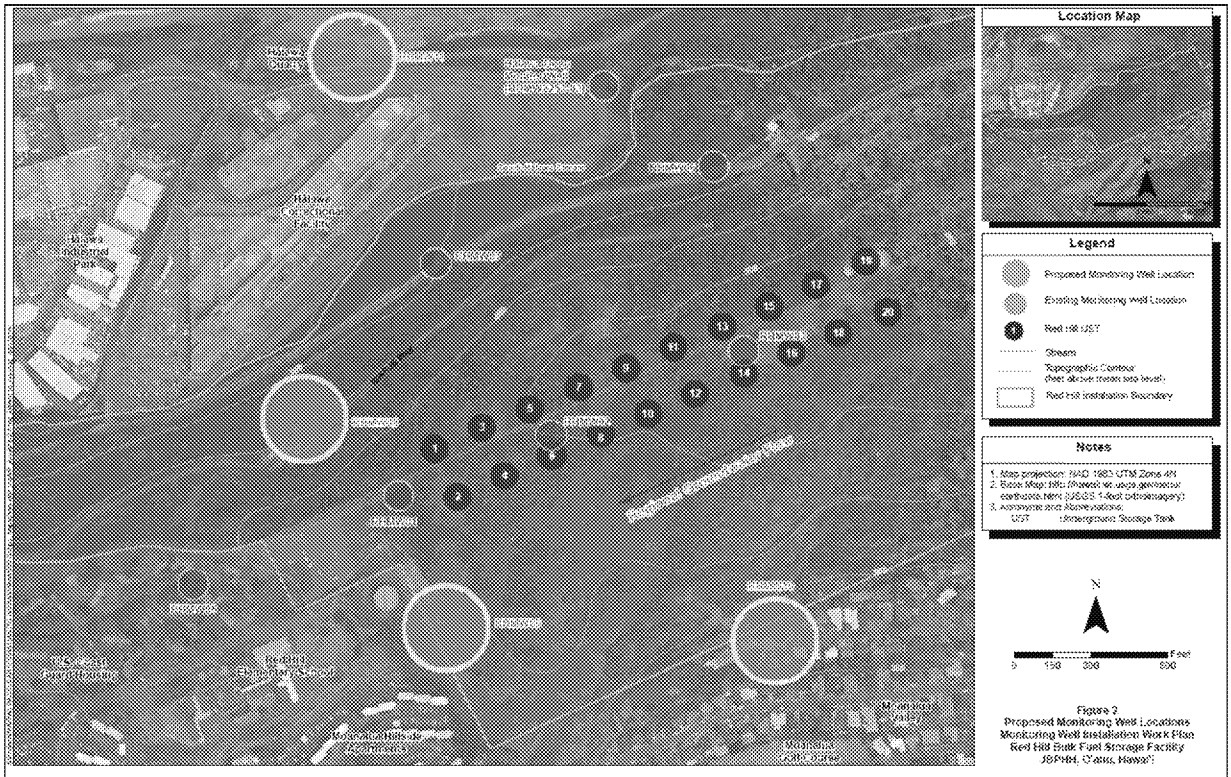
Specific Task	AOC Deadline	Current Status
Scoping Mtg GW Flow Model Report (7.1.1)	Within 30 days of effective date of AOC	Complete
GW Flow Model SOW (7.1.2)	Within 90 days from final scoping mtg for GW Flow Model	
Scoping Mtgs Fate and Tran Model Rpt. (7.2.1)	Begin within 30 days of effective date of AOC	Complete
Fate and Transport Model SOW (7.2.2.)	Within 90 days from final scoping mtg for Fate and Trans Model	
Scoping Mtgs GW Monitoring Well Network (7.3.1)	Begin within 30 days of effective date of AOC	Complete
GW Monitoring Well Network SOW (7.3.2)	Within 90 days from final scoping meeting	Well Installation Report for initial additional wells pending approval
GW Monitoring Well Network Rpt (7.3.3)	Within 12 months from regulatory agencies approval of GW flow model report	



Well (EPA / Field Sample ID)			OWDPMW01 (ERH01A)				
Method	Analyte	DOH ERL	Result	Q	LOQ	LOD	DL
EPA 8015C	TPH-g	100	ND	U	50	25	8.3
	TPH-d	100	160	B,J	58	22	12
	TPH-o	100	65	B,J	110	54	21
EPA 8270D SIM	1-Methylnaphthalene	4.7	0.030		0.020	0.0050	0.0035
	2-Methylnaphthalene	10	0.030		0.020	0.0050	0.0023
	Naphthalene	17	0.024		0.020	0.0050	0.0038
EPA 8260C / 8260-SIM / 8011	1,2-Dibromoethane (EDB)	0.04	ND	U	0.0087	0.004	0.003
	1,2-Dichloroethane (EDC)	5	0.0095	J	0.028	0.015	0.0016
	Benzene	5	ND	U	0.50	0.10	0.082
	Ethylbenzene	30	ND	U	0.50	0.10	0.050
	Toluene	40	0.38	Th, J	0.50	0.10	0.064
	Xylenes, Total	20	ND	U	1.0	0.20	0.16

Significance of Oily Waste Pit

- Cleanup of Oily Waste Pit Not Within Scope of AOC
- GW Contamination at OWDFMW01 Cannot Be Solely Attributed to Tank 5 Release
  - The Oily Waste Disposal Pit is a Documented Historic Source of Contamination
  - The Oily Waste Disposal Pit Investigation and Remediation Was Overseen by DOH



Additionally Planned Monitoring Wells Pending Installation

Contaminants of Potential Concern (CoPC)

- Since 2005, Navy has collected quarterly samples and analyzed them for 64 separate compounds
- 52 of these 64 compounds have generally not been detected in samples collected.
  - Some compounds have been detected but at levels significantly below State Environmental Action Levels

Contaminants of Potential Concern (CoPC)

- The 52 compounds that the Regulatory Agencies agreed to remove from the analyte list are not constituents of the fuel being stored at Red Hill.
- As per comments from the BWS, Navy will provide a list of all fuel additives currently in fuel used at Red Hill.
- Final COPC list may be revised based on our review of fuel additives.

Contaminants of Potential Concern (CoPC)

- Current list of Analytes includes 12 compounds:
  - Total Petroleum Hydrocarbons (TPH-d, TPH-o, TPH-g)
  - BTEX (Benzene, Toulene, Ethylbenzene, Xylenes)
  - Napthalenes (Napthalene, 1-Methylnapthalene, 2-Methylnapthalene)
  - Lead Scavengers (1,2 Dichloroethane, 1,2 Dibromoethane)

Section 8 – Risk and Vulnerability Assessment

Specific Task	AOC Deadline	Current Status
Risk and Vulnerability Scoping Mtgs (8.1)	Begin within 30 days of effective date of AOC	In progress. Next scoping meeting needs scheduling
Risk/Vulnerability Assess SOW (8.2)	Within 90 days of final scoping mtg	

Risk and Vulnerability Assessment – Key Issues Discussed to Date

- Establishing Probability and Magnitude of Future Major Releases
- Identifying Vulnerabilities
- Interaction Between Section 8 Work and Work Being Done Under Other Sections of the AOC

Questions / Discussion